

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended): A method for producing a transparent optical element having a elements, the surface of which has reduced interfacial reflection, at least in certain regions, in which said method comprising:

providing a reference element having a the respective surface made of a reference element which consists of a polymeric material, said respective surface of said reference element corresponding to the desired surface of the optical element to be produced, and corresponds to the respective optical element is exposed

exposing said respective surface of said reference element to the influence of high-energy ions in a vacuum and in this way to form an irregular nanostructure with alternately arranged elevations and depressions lying in between is formed on the said respective surface of said reference element;

subsequently [[.]] coating said the respective surface of said reference element is coated with an electrically conducting thin film,

subsequently forming following that a mold with a negative contour which is superposed by the nanostructure is obtained by electrochemical forming, and

using said mold in a molding process to form with such a mold, a nanostructure which reduces reducing the interfacial reflection is formed on at least one surface of a transparent optical element by a molding process.

2. (Currently Amended): The method as claimed in claim 1, wherein said characterized in that a reference element has with an optically effective surface contour is used.

3. (Currently Amended): The method as claimed in claim 1, wherein said characterized in that the high-energy ions are generated by means of an argon/oxygen plasma.

4. (Currently Amended): The method as claimed in Claim 1, wherein said

~~reference element is made from characterized in that~~ polymethylmethacrylate, diethylene glycol bis (allylcarbonate) (CR39) or methylmethacrylate-containing polymers ~~are used for the production of the reference element.~~

5. (Currently Amended): The method as claimed in Claim 1, wherein ~~characterized in that~~, by means of ~~said~~ the high-energy ions, the elevations of the nanostructure are formed with heights in the range between 30 nm and 210 nm.

6. (Currently Amended): The method as claimed in Claim 1, wherein ~~characterized in that~~ the average thicknesses of the elevations of the nanostructure are ~~formed~~ in the range between 30 nm and 150 nm.

7. (Currently Amended): The method as claimed in Claim 1, wherein said ~~characterized in that the~~ electrically conducting layer is formed as a thin metal film.

8. (Currently Amended): The method as claimed in claim ~~7~~ 9, wherein said ~~characterized in that the~~ electrically conducting layer is formed from gold.

9. (Currently Amended): The method as claimed in Claim 1, wherein ~~characterized in that~~ the ions impinging on the respective surface have an energy in the range between 100 eV and 160 eV.

10. (Currently Amended): The method as claimed in Claim 1, wherein ~~characterized in that~~ an ion bombardment of the respective surface is carried out over a time period of between 200 s and 600 s.

11. (Currently Amended): The method as claimed in Claim 1, wherein ~~characterized in that~~ an ion bombardment is carried out at a pressure below  $10^{-3}$  mbar.

12. (Currently Amended): The method as claimed in Claim 1, wherein ~~characterized in that~~ the molding of the optical elements takes place by hot embossing or by a

plastics injection-molding technique.

13. (Currently Amended): The method as claimed in Claim 1, wherein  
~~characterized in that~~ the molding of the optical elements takes place by extrusion embossing  
or UV replication.

14. (Currently Amended): The method as claimed in Claim 1, wherein  
~~characterized in that~~ the surface of ~~an~~ said optical element is coated with an organic-inorganic  
hybrid polymer and the nanostructure is formed with a mold on the surface of said this  
hybrid-polymer layer.

15. (Currently Amended): A mold for producing optical elements produced by a  
method as claimed in Claim 1, said mold having ~~characterized in that~~ an irregular  
nanostructure with alternately arranged elevations and depressions lying in between ~~is~~ formed  
on a surface thereof, and the depressions in each case have different depths within an interval  
between 30 nm and 210 nm,  
wherein the respective depths and/or thicknesses of depressions are distributed  
uniformly about a mean value within an interval.

16. (Currently Amended): The mold as claimed in claim 15, wherein  
~~characterized in that~~ the depressions have an average clear width in the range between 30 nm  
and 150 nm.

17. (Cancelled):

18. (Currently Amended): The mold as claimed in Claim 15, wherein said mold  
~~characterized in that~~ it is formed for the production of Fresnel lenses.

19. (Currently Amended): The mold as claimed in Claim 15, wherein said mold  
~~characterized in that~~ it is formed for the production of optical windows, optical lenses,  
lenticular lenses, beam splitters, optical waveguides or optical prisms.

20. (Currently Amended): The mold as claimed in Claim 15, wherein said mold  
~~characterized in that~~ it is formed for the production of optically transparent films.

21. (Currently Amended): The mold as claimed in Claim 15, wherein said mold  
~~characterized in that~~ it is formed for the production of coverings for displays or for optical  
indicating elements.

22. (New): A process according to claim 1, wherein said elevations and  
depressions are formed in different dimensions over the respective surface whereby the  
corresponding nanostructure provides a refractive index gradient layer in the surface of the  
optical element.